

## REMARKS

Claims 14-34 are pending with claims 31-34 added by this paper.

### Double Patenting Rejections and Claim Amendments

Claims 14-30 stand rejected as allegedly being unpatentable under the judicially created doctrine of obviousness-type double patenting over claims 1-34 of U.S. Patent No. 6,379,758. Attached hereto is a Terminal Disclaimer obviating these grounds of rejection. Consequently, Applicants respectfully submit that these grounds should be withdrawn.

### Claim Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 14-30 stand rejected as allegedly being indefinite. With respect to rejection grounds 6-11, 13 and 14, Applicants have made amendments which obviate at least some of these rejections.

Particularly, with respect to rejection ground 6, Applicants have deleted a compound of the formula II from that claim and presented this compound in new claim 31 and amended claims 20 and 22.

With respect to the rejection ground 7, the term "which maybe" has been replaced with optionally. With respect to rejection ground 8, Applicants have deleted these terms from claim 14 and have rewritten them in new claim 31.

With respect to rejection grounds 9 and 10, the definition of the moiety R in claim 14 has been rewritten as, " . . . , or R is halogen, cyano or, independently, P-(Sp-X)<sub>n</sub> . . . ". Applicants respectfully submit that this rewriting of the claim has eliminated the grounds for indefiniteness.

With respect to rejection ground 11, claim 15 has been amended to recite, “Polymer layers comprising the . . .,” to obviate the rejection for claim 15.

With respect to rejection ground 13, the typographical error “mesoenic” has been corrected in claims 22 and 27, and similarly in claim 1. Applicants have also corrected a typographical error “mesogenity” in claim 14. With respect to rejection ground 14, Applicants have amended claim 29 to obviate this ground of rejection.

Consequently, Applicants respectfully submit that these grounds of rejection have been obviated. Applicants respectfully submit that none of these amendments narrow the scope of the claims.

With respect to the grounds of rejection at paragraph 5a, Applicants respectfully submit that one of skill in the art could readily ascertain that a single polymer layer exhibited a tilted structure. See, for example, FIGS. 1A and 1B of the present specification. With respect to the rejection ground at 5b., Applicants respectfully submit that the claim is sufficiently definite by defining, “. . . layer exhibiting a tilted structure with an optical axis having a tilt angle  $\theta$  relative to the plane of the layer . . .”. Particularly, breadth of a claim is not to be equated with indefiniteness. As an example, if a claim directed to a house comprising a fastening member, there is no requirement that the claim include all possible fastening members that could be included in a house. Simply defining one is sufficient. Similarly, there is no requirement to include all optical axes present in the layer for one of skill in the art to understand the metes and bounds of the invention. Particularly, only specifying one optical axis is sufficient with respect to the present invention. Consequently, Applicants respectfully submit that these grounds of rejection should be withdrawn.

With respect to the three remaining grounds cited at paragraph 6, as well as rejection ground 7, Applicants respectfully submit that there is no *per se* rule that the using the term “optionally” renders a claim indefinite. Particularly, if one of skill in the art could readily ascertain the metes and bounds of the claimed invention, then these rejections should be withdrawn. In this case, Applicants respectfully submit that defining groups as being, e.g., optionally unsubstituted, mono or polysubstituted, is readily ascertainable by one of skill in the art. See M.P.E.P. § 2173.05(h) and *Ex parte Wu*, 10 U.S.P.Q2d 2031 (Board of Patent Appeals and Interferences, 1999). Consequently, Applicants respectfully submit that these rejections should be withdrawn.

With respect to rejection grounds 10, particularly, that the claims should recite “a mixture of components” instead of simply “a mixture of”, Applicants respectfully submit that one of skill in the art reading claims 27 and 28 would readily understand that claim 27 defines a mixture of a1), a2), and b) and claim 28 defines a mixture of a1A), a1B), and a2), and b). Particularly, these claims are clearly ascertainable on their face. Consequently, Applicants respectfully submit that these grounds of rejection should be withdrawn.

With respect to rejection ground 12, claim 16 defines a polymer layer with varying tilt, i.e. “splayed structure.” The value of 0-20° in claim 16 refers to the minimum tilt angle  $\theta_{\min}$ , i.e., the local minimum tilt at one side of the layer, not the tilt angle  $\theta$  throughout the entire layer. The maximum tilt angle  $\theta_{\max}$  is preferably from 20-90° (see claim 17). Thus, the tilt angle  $\theta$  throughout the entire polymer layer varies from 0-90°. This means that the average tilt in this polymer layer is greater than zero, hence the polymer exhibits a tilted (and splayed) structure. Thus, a tilted layer with varying tilt  $\theta$  can indeed have a minimum tilt angle  $\theta_{\min}$  that is equal to zero.

With respect to rejection ground 13, particularly, that “claim 27 should recite ‘a mixture of two or more components’”, Applicants respectfully submit that, similarly as discussed above for rejection ground 10, this ground of rejection should be withdrawn. Particularly, one of skill in the art could readily ascertain the metes and bounds of this claim.

Consequently, Applicants respectfully submit that these grounds of rejection be withdrawn.

#### Claim Rejections Under 35 U.S.C. §102

Claims 14, 19-27 and 30 stand rejected as allegedly being anticipated by U.S. Patent No. 5,762,823 (Hikmet). Applicants respectfully traverse these rejections.

At the outset, claim 14 has been amended to define, “. . . a tilt angle  $\theta$  that relative to the plane layer greater than 0 . . .” and “. . . the polymerizable mesogenic material comprises at least 95% by weight of the polymerizable compounds”. Support for these amendments can be found in the specification at page 19, line 29 - page 10, line 25 and pages 34-35 and examples 1 and 2 at pages 37 and 40. See, e.g., *In re Wertheim*, 191 U.S.P.Q. 90 (CCPA 1976).

With respect to Hikmet, Hikmet discloses an optically active layer consisting of maximally 2 wt. % of monomers with at least two polymerizable groups and maximally 30 wt. % of a liquid-crystal monomers with one polymerizable group. Consequently, Hikmet discloses an optically active layer consisting of no more than 32 wt. % of monomers with polymerizable groups. See column 3, lines 48-59 and column 4, line 63- column 5, line 5. Hikmet fails to teach or suggest a polymerizable mesogenic material comprising at least 95 % by weight of polymerizable compounds. What is more, although Hikmet discloses an orientation layer at column 3, it fails to teach a tilt

angle  $\theta$  relative to the plane of the layer greater than 0. Consequently, Applicants respectfully submit that these rejections should be withdrawn.

#### Claim Rejections Under 35 U.S.C. §103

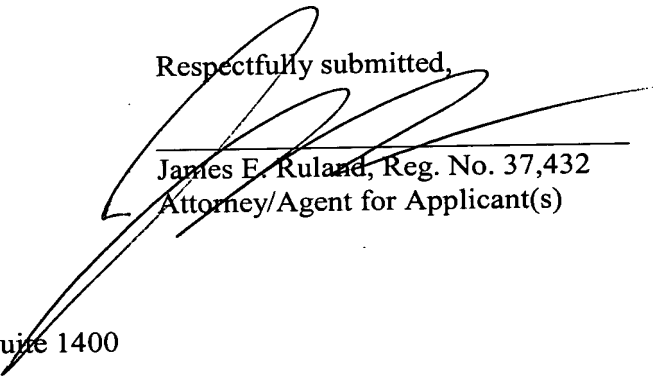
Claims 15-16 and 26 stand rejected as allegedly being unpatentable over Hikmet in view of U.S. Patent No. 5,863,457 (Hasebe). Applicants respectfully traverse these rejections. Hikmet discloses chemical structures of monomers at FIG.2. These monomers have spacer groups of hexylene. Hasebe discloses polymerizable liquid crystal compositions including a compound of the general formula (I). See columns 5-6 of Hasebe. These compounds, have no flexible linking group called a “spacer,” such as an alkylene group or an oxyalkylene group interposed between the rigid liquid crystal and skeleton and the (meth) acrylic ester group as a polymerizable functional group. See column 6, line 62 - column 7, line 11. Consequently, Hasebe touts the use of a compound in its liquid crystal composition lacking a spacer group.

In determining whether references can be combined, their teachings as a whole must be considered. In this case, Hasebe touts the use of a compound lacking a spacer group. Hikmet at FIG. 2 discloses the use of a hexylene spacer group. Applicants respectfully submit that there would be no motivation for one of skill in the art to pick the compounds of Hasebe out of the countless number of compounds that could be included in the optically active layer of Hikmet. Consequently, Applicants respectfully submit that there is insufficient motivation to combine the teachings of these references, and these rejections should be withdrawn.

In view of the above, favorable reconsideration is courteously requested. If there are any remaining issues which can be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

  
James E. Ruland, Reg. No. 37,432  
Attorney/Agent for Applicant(s)

MILLEN, WHITE, ZELANO  
& BRANIGAN, P.C.  
Arlington Courthouse Plaza 1, Suite 1400  
2200 Clarendon Boulevard  
Arlington, Virginia 22201  
Telephone: (703) 243-6333  
Facsimile: (703) 243-6410

Attorney Docket No.: MERCK-1972D1

Date: June 20, 2003

JER/jqs

K:\Merck\1972D1\Reply 6-19-03.doc